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SIERRA LEONE

Annual Report

OF THE

Department of Agriculture

For the Year 1940

1942

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ANNUAL REPORT—AGRICULTURAL DEPARTMENT, 1940.

SIR,

I have the honour to submit my report for the year 1940.

SECTION I—INTRODUCTION AND GENERAL REVIEW OF CROPS INCLUDING EXPORTS.

Throughout 1940, within the framework of the Government policy for agricultural development, work has been pursued with all the vigour and enthusiasm of a staff which knows that, while every effort made to increase production is helping to win the war, those same efforts are laying a sound foundation for the continuance of production in the peace which will follow victory. No time is being lost on frills and fancy projects, we know how to produce food along certain lines and our energies are being directed to intensifying efforts along these approved lines of development. It is not spectacular but it is sound and it was so successful in 1940 that more food was produced that year than in any previous year in the history of Sierra Leone. But in spite of this large production there are so many calls on our supplies, owing to military and war works requirements, that some doubt existed as to whether the supplies of rice would last until the new crop in 1941, and this is due to the disastrous turn the war took when France fell.

2. Up till June, 1940 everything pointed to a plentiful supply of all foodstuffs but with the fall of France and the entry of Italy into the war this altered. Sierra Leone was more affected than any other West African Colony. Ships normally passing through the Mediterranean assembled at Freetown for convoy and it became one of the biggest convoy centres in the Empire. Many ships wanted various foodstuffs and these or suitable alternatives had to be supplied. The demand was chiefly for meat and vegetables and although production had been stimulated and was the highest ever, it was never quite enough to fill the insatiable maw of the merchant fleet and provide enough for the Navy, the Army and the civil population. Freetown was therefore often short of vegetables.

3. But the most marked development was that which followed the immediate necessity to increase the defences of Sierra Leone as soon as the French were no longer protecting our northern flank. Enlistment proceeded apace, labourers in large numbers were employed in building camps, aerodromes and other defences ; and troops were sent to Sierra Leone. Not only, therefore, was an appreciable proportion of the farmers taken from the land but the mouths to be filled increased enormously. One point was not immediately appreciated and that was the increased consumption per head of rice and other local foodstuffs by the non-farming population. These, for the first time in recent history, were fully employed and well paid, and their standard of living previously below that satisfactory for normal nutrition, went up at once. Soldiers were issued with 1½ lb. of rice a day and labourers had the money to buy plentifully, not only for themselves, but for their dependents. The local market for rice in pre-war years was about 10,000 tons a year. In a very short time this increased to 20,000 tons and will probably increase still more. The situation at the end of 1940 was therefore how to increase production with a smaller number of farmers to satisfy the increased demands.

4. Fortunately the upland farms in 1940 were planted before the French fell and the men left behind with the women and children were able to do all the weeding and harvesting in those areas affected by enlistment of troops and employment of labourers. No real scarcity was anticipated for 1941 so far as the farming community was concerned, but difficulties were anticipated in collecting the large quantities of rice required for the troops and labourers. By the end of the year the position seemed to be that some 17,000 tons of rice would come on to the market and that some 3,000 tons would need to be imported. This increase of 7,000 tons of rice in the local markets was no small effort in a Colony which, a few years ago, had an annual hungry period. (At the time of writing this report the situation is even more favourable).

5. It was however realised that efforts would have to be redoubled and experience had shown that the only farmers capable of producing surplus rice in any quantity were swamp farmers; since farmers depending on upland farms only, have always experienced difficulties in feeding themselves properly. A further drive towards the swamps was consequently planned in the end of 1940 and arrangements made for the distribution of rice seed in these hitherto undeveloped swamps. Farmers were also encouraged to increase production of other foodstuffs such as sweet potatoes and cassava.

6. As in 1939, the department had to curtail some of its investigational work, but—

(*a*) carried out a vigorous campaign to increase the production of foodstuffs, especially rice and vegetables,

(*b*) organised the collection and distribution of foodstuffs controlling the prices of the main items,

(*c*) regulated the importation of essential foodstuffs not produced locally.

It was unnecessary to carry out any propaganda to increase export crops such as palm kernels, ginger, cocoa, etc., as owing to the closing of many European markets, production was already more than sufficient.

Despite the war, or perhaps because the war emphasized the need for food production, the department was able to develop existing schemes and start new work in various areas; and its progress was accelerated rather than retarded. The main lines of Government's policy are repeated below, and, as in my 1939 Report only the new steps taken during 1940 are given to show how the department has further implemented this policy during the year under review.

The policy is as follows :—

A. The adequate provision of food for the people.

This is to be accomplished by :—

I. The Improvement and Spread of Swamp Rice Cultivation to such an extent that not only will the needs of the people be supplied in a bad year but there will be a surplus for export in ordinary years.

New work commenced in 1940.

(i) *Swamp Clearance Scheme.*—The Protectorate Mining Benefits Fund continued its grant of £500 and a further 657 acres were cleared.

(ii) *Seed Farms.*—Rokupr Seed Rice Multiplication Farm was brought into full working during 1940 and it was possible to single out certain rice varieties, grown successfully in 1939, for multiplication and subsequent distribution to farmers.

(iii) *Revolving Seed Rice Scheme.*—Increased supplies of seed enabled this scheme to be extended to other areas and over 4,000 bushels of improved varieties of swamp rice were distributed to farmers.

(iv) *Irrigation and Drainage Scheme.*—The Colonial Development and Welfare Fund approved a free grant of £13,285 in January, 1940 for an Irrigation and Drainage Engineer to survey and formulate schemes for the reclamation and development of swamp lands. The progress of the war held up this grant for a time but it was eventually re-affirmed and an officer, Mr. C. J. Rae, appointed. This officer left England for Sierra Leone during December.

II. The better Cultivation of Inland Swamps and Valleys for Rice during the Wet-Season and the introduction of Crops other than Rice in Swamps during the Dry-Season.

New work commenced in 1940.

(i) *Inland Swamp Farm, Makeni.*—The establishment of a farm to demonstrate the use of inland swamps was approved and financed from the Protectorate Mining Benefits Fund. The site reported as provisionally selected in my last report proved suitable. It was taken over by the department but unfortunately lack of staff made it impossible to get to work until very late in the year. Mr. E. Capstick has taken charge of this farm.

(ii) *Seed Distribution by Native Administrations.*—It was found possible to interest certain Native Administrations in the possibilities of development of inland swamps by the distribution of seed rice in inland areas where it was either lacking or the existing types were not very satisfactory. The Native Administrations purchased the seed rice and the department assisted in the distribution of the seed in the chiefdom concerned. Trial distribution of seed through Native Administrations has therefore commenced.

III. The Extension of Garden and Small-field Crops to serve as an Auxiliary Food Supply.

New work commenced in 1940.

In view of the large demand for vegetables owing to the war the department imported and distributed large quantities of vegetable seeds, as well as buying and distributing local varieties where necessary.

IV. The Selection (or Introduction) and Distribution of Seeds and Plants Suitable for I, II and III.

V. Improvement of Poultry and Stock.

New work commenced in 1940.

A quick survey of the livestock position was made by a Veterinary Officer (Mr. J. B. Best), who was seconded from Nigeria. A useful report was made and recommendations submitted in December.

B. The Cultivation of Money Crops or Exploitation of Wild Trees for Export Purposes.

New work commenced in 1940.

(i) An Agricultural Officer was stationed in the " high bush " area at Kenema late in the year. He will be responsible for demonstration and propaganda in that area. Provisional sites for a Government sub-station and for Native Administration seed farms have been selected.

(ii) Following strong representations from this department the Roads Committee have recommended the construction of a road from Giema to Zimi to open up a potentially rich agricultural area. The funds for this road were provided in the 1941 Estimates.

C. The Arresting of the Degradation of the Forest Growth of Sierra Leone or at any rate increasing the Regeneration Period between Successive Brushings of the Same Area.

No new work but the continued diverting of farmers from the uplands to the swamps is of great importance.

D. The Improvement in the Preparation and Marketing of Produce.

New work commenced in 1940.

Improvement of Rice Milling.—The drying plant to enable the drying and conditioning of rice was erected by the end of 1940 and preliminary trials made.

E. The Preservation of the Standard of Export Produce by Inspection.

The calls on the staff for war work has diminished the time spent on inspection.

F. Co-operation with Education Department where possible in the Teaching of Agriculture.

The agricultural side of the scheme at Njala was enlarged to take Agricultural Apprentices for the first two, as well as the last two years, of their training. This was necessitated by the closing of Mabang Agricultural Academy which was taken over for war purposes. Provision was also made for the present S. B. Thomas Trust scholars from Mabang to finish their course at Njala.

G. Research.

This was considerably affected by the war and both the Plant Pathologist and the Entomologist were diverted to other more pressing work.

H. Conservation of Soil.

Little actual work was done but the department still continues to divert farmers to swamps—where erosion is much less acute or negligible—while the Conservator of Forests formulated schemes for the control of land which were considered by the Standing Committee on Soil Erosion.

I. Nutrition.

The work of the Nutrition Committee was considerably impeded on account of the war, but the department directed its effort to preserving the protective properties of rice by " under-milling " and to increasing the production of vegetables.

Malnutrition was reported among the Kissis in the Kailahun District by the Medical Officer-in-charge of the Trypanosomiasis work and proposals were formulated for increasing foodstuffs in that area in 1941.

J. **Extension Work. All Extension Work and Propaganda must be based on Information gained from experiment, or from experience by Agricultural Officers in Sierra Leone.**

New work commenced in 1940.

(*a*) An inland swamp farm at Makeni (financed by the Protectorate Mining Benefits Fund). Possession was taken of a suitable site and some preliminary work started (*see* II (i)).

(*b*) Sites were provisionally selected for a sub-station at Kenema and for certain Native Administrations' seed farms in the area under the control of the Agricultural Officer stationed at Kenema.

The above briefly describes the new work started in 1940 to implement further the Government's policy with regard to agriculture. Other lines of work described in my two preceding Annual Reports were vigorously pursued with the exception that research work has had to give way to the more pressing needs of immediate production and conservation of supplies; and all available staff had to be concentrated on this problem. Even so, we have not departed one iota from our policy, which is production combined with maintenance of fertility.

GENERAL REVIEW OF CROPS INCLUDING EXPORTS.

7. The year under review was a satisfactory one for upland farming and crops were well up to average in most cases. The rains continued later than usual, but this assisted the later planted wetland rice crop, which yielded well. In the Colony area October was an exceptionally wet month, which delayed the planting of market gardens by a month.

8. *Rice Crop.*—Taking into account the abnormally heavy demand for rice in 1940, due to war needs, the 1939 crop lasted well, and apart from a few isolated cases of shortages in the Protectorate and Freetown during the August to September period, there was sufficient to supply all needs. The 1940 upland rice crop yielded up to average and the demand for the crop after harvest was very heavy. The price of this commodity fluctuated considerably during the year and was very high in August/September owing to sudden demands and the holding up of rice by traders. There was a slump in price in November but generally the price did not fall below 3*s.* 6*d.* per bushel (wholesale), while by the end of the year the price had gone up to 4*s.* 6*d.* to 5*s.* per bushel. Owing to the low price offered for palm kernels farmers were forced to sell rice for tax purposes at a lower price than would normally have been the case.

9. It was possible for Sierra Leone to assist the Gambia Government with rice, as in 1939, and 1,175 tons were exported in the early part of the year. This, however, was a small amount in comparison with the heavy local demand in this Colony in the latter part of the year due to the ever-increasing demand for military needs, and labour forces recruited for structural works.

10. Foodstuffs other than rice yielded well, and production was probably greater than in any previous year, but even so, all the demands made by the war were not adequately met. It is satisfactory to be able to record that the area under these crops, as far as the Protectorate is concerned, was increased in the dry season of 1940. This, however, was not the case with the Colony area (relatively small) where a marked reduction in planting of cassava, the principal Colony crop, has taken place, due to the heavy recruitment of labour for war needs.

11. *Export Crops.*—The price of palm kernels was controlled under the British Government's buying scheme but the cocoa crop was outside this control.

The following table gives the exports of the principal agricultural products during the year :—

EXPORT OF AGRICULTURAL PRODUCTS IN 1940.

Palm products	tons	53,283
Palm oil	,,	1,365
Piassava	,,	3,996
Ginger	,,	1,770
Kola	,,	953
Cocoa	,,	663
Rice	,,	1,204
Chillies	,,	136
Coffee	,,	25
Hides and Skins	cwt.	50

SECTION II—THE WORK OF THE AGRICULTURAL DEPARTMENT.

FOOD PRODUCTION.

12. The work of the department has continued on the lines described in the 1938 and 1939 Annual Reports, but with still further intensification of effort directed towards food production, in view of war needs. Every effort was put into this work. Rice is the main food crop of the Colony and with the large diversion of young able-bodied men from the Protectorate for military enlistment, and to supply the necessary labour for war works of pressing urgency, the importance of increasing the production of this crop by the remaining farmers cannot be too strongly stressed. It is essential for those that remain on the land to increase their production, and this can only be done by introducing a greater proportion of wetland cultivation. To this end strenuous propaganda is being directed by the Administrative and Agricultural staff, together with the assistance of the Paramount Chiefs. It is clear that one of the most important contributions this Colony can make to the war effort is to become self-supporting with regard to foodstuffs, both for the civil population, and fighting services. It is not thought that there will be serious shortage in 1941 resulting from the 1940 crops ; but it is against any shortage in 1942 that steps must be taken, and were commenced by the end of 1940, by increasing propaganda and schemes for seed distribution.

13. The expansion of the area under rice cultivation during 1940 went steadily forward under the department's policy of bringing more of the uncultivated swamp lands into use. This is particularly the case in the coastal areas of the Scarcies region and in the riverine swamp lands of the Moyamba District. In the latter case work is largely centred on mangrove forest felling, which is opening up large tracts of land for rice cultivation. The value of the surveys made during 1939, and early 1940, has enabled the possibilities of development to be appreciated, and it is estimated from these that there is an area of over 23,000 acres in the Southern Province, consisting of mangrove forest, grassland and raphia swamps, which could be brought under rice cultivation without further drainage works; of this area only some 10,000 acres are now under cultivation.

14. The scheme for assisting farmers to clear mangrove forest in these areas inaugurated in 1939, was continued and a further £500 was granted by the Protectorate Mining Benefits Fund and given out in small loans to 93 approved farmers. A further 657 acres were cleared of mangrove in this way, bringing the total area cleared to 1,302 acres, with 197 farmers participating in the scheme. The results are most promising but more money and propaganda are required.

15. The revolving seed rice scheme continued to expand during the year and a further 4,064 bushels of improved seed varieties, were given out. This is 789 bushels more than the 1939 figure. Arrangements are now under way by which similar schemes are to be organised and financed with the use of Native Administration funds, and it is confidently expected that considerable headway will be made in 1941.

FOOD CONTROL.

16. This branch of the department, which was opened at the outbreak of war, continued to function smoothly. The Food Controller (Director of Agriculture) assumed the added duties of Controller of Merchandise. The prices of all main products, both imported and locally grown, were controlled under the Defence Regulations. The quota system, which regulated the supply of imported goods, was applied to all foodstuffs imported from United Kingdom.

ROKUPR AND SEMBEHUN AGRICULTURAL STATIONS.

17. The Rokupr Research Station and Seed Rice Multiplication Farm together with the demonstration farm at Sembehun, continued to carry out their approved functions during 1940. Further useful data have been collected and it has been possible to concentrate on the multiplication of certain rice varieties suited to local conditions. One introduced variety, Kavunginpoothala, yielded over forty bushels per acre at Rokupr, and this deep water rice is becoming increasingly popular amongst farmers. The area of tidal swamp cultivated at the Sembehun demonstration farm was increased, and eleven acres were bunded and laid out in half-acre plots. A problem which is engaging the staff in swamp areas is concerned with the most suitable treatment for the peaty type of soil so frequently found, and experiments are now being conducted in connection with this problem.

FOOD PRODUCTION IN NORTHERN AREAS.

18. The inauguration of this scheme, mention of which was made in 1939, and scheduled to start in 1940, was delayed owing to shortage of staff. It was not until the arrival of two new Agricultural Officers in November that an officer could be allotted specifically for this enterprise and some preliminary work was started at Makeni. This work, which was mentioned in previous reports, is being financed by the Protectorate Mining Benefits Fund and should be of considerable assistance in developing and demonstrating more permanent forms of cultivation in swamp and valley bottoms in the interior of the Protectorate.

HIGH BUSH AREA.

19. Increase of European staff allowed an officer to be posted to Kenema at the end of the year, where a sub-station is now being opened, and work will be concentrated on the development of inland swamps for rice production and other foodstuffs, also the expansion of cocoa and other tree crops in the high bush areas.

RICE MILL.

20. The Rice Mill at Cline Town worked at considerable pressure during the year and is assisting greatly in the development of the rice industry. 63,116 bushels of paddy and native cleaned rice were received for milling, of which 62,611 bushels were actually milled, being an increase of 11,791 over 1939. A profit of £1,032 was made on the year's working. The mill worked up to capacity and the provision of a larger plant would be well justified.

IRRIGATION AND DRAINAGE.

21. Early in the year the Colonial Advisory Committee approved a free grant of £13,285 from the Colonial Development and Welfare Fund in order to obtain the services of an expert Irrigation and Drainage Engineer who would review the possibilities of controlling water in the large tidal areas of this country at present uncultivated, and which should be capable of growing rice on a very large scale. Great difficulty was experienced in obtaining the services of a suitable officer, but a selection was finally made at the end of 1940 and Mr. C.J. Rae was appointed; he left England in December and reached this country in January, 1941. A valuable preliminary survey of the Scarcies region has already been undertaken and it is hoped that in the next annual report considerable progress will be reported in this direction.

THE LIVESTOCK INDUSTRY.

22. The services of Mr. Best, Veterinary Officer, Nigeria, were secured towards the end of the year for a period of two months. During this period he was able to carry out a restricted but valuable survey and submit recommendations. Mr. Best was able to point out the serious diseases that at any time might befall the cattle population of the country, those of a less serious nature which existed, and the urgent necessity of veterinary assistance being available.

23. This country is still largely dependent on imports for its meat supply, and these might at any time, suddenly become difficult to obtain. The war, with the consequent added military requirements for meat supply, has imposed a great strain on the resources of the country, and the importance of fostering our cattle is of even greater importance than formerly. The total cattle population of the country is estimated by Mr. Best to be 80,000 to 100,000 head.

24. A serious outbreak of Fowl typhoid occurred throughout the country during 1940, the incidence of disease being particularly high. This reduced the available poultry supply to small proportions, which could be ill-afforded with demands made by the war. An outbreak of disease of this nature is still another indication of the urgent need of veterinary services.

TEKAW STOCK FARM.

25. The department's stock farm at Tekaw was advanced a step further during the year with the provision of a small breeding herd, and the completion of certain buildings and fencing. The condition of the cattle was most affected by severe attacks of *Stomoxys nigra* in August and September, and foul in the foot was also severe during the wet months. Mr. Best who visited the farm was able to prescribe various forms of treatment. He was able to diagnose other complaints. Chief amongst them *Haemonchus contortus* (wire worm). Bovine Bilharzia, Anoplasmosis, liver fluke, and Trypanosomiasis were also diagnosed in certain cases.

26. Buying of cattle for the reserve herd mentioned in the 1939 report was continued early in the year and totalled some 200 animals. Owing to incidence of disease, and the lack of veterinary advice it was decided not to continue with the reserve herd but to dispose of it as occasion allowed.

NJALA AGRICULTURAL STATION.

27. Experiments were carried out chiefly on measures designed to improve soil fertility. More information is now available on the important question of shade for coffee trees. Citrus yields on the newly planted blocks were satisfactory and the quality was good. Canning trials were continued with satisfactory results.

28. Work on pig-breeding continues and several half bred litters, using a pure bred Berkshire boar and native sows, resulted during the year. These half bred pigs show considerable promise but have not yet achieved the increase in size expected. This may be due in a large measure to feeding and this aspect of the problem is receiving careful attention.

29. With the keeping of some stock at Njala attention has been turned to the growing of adequate supplies of fodders and grasses, and to this end various types are being tried out on an extended scale.

COLONY PENINSULA.

30. Work at Newton Agricultural Station, with Cline Town sub-station continued as far as staff allowed. Important experimental work on empoldering an area at Maswari for rice growing, which may have far-reaching results, was continued and extended. It is too early to give any reliable results of this work, but it is hoped to report in detail in 1941.

31. Increased interest in seed rice distribution schemes has been shown in the Newton area, and the quantity of improved strains of seed rice distributed was 488 bushels against 311 in 1939. Further large quantities of vegetable seeds have been distributed. As an inducement to local growers demonstration plots were run at Goderich and Hastings to encourage production of European market produce. Advisory work has also been undertaken in connection with the establishment of military vegetable gardens.

RESEARCH AND INVESTIGATION.

32. Owing to the diversion of the Plant Pathologist and Entomologist to other duties, consequent upon the war, little active research has been possible. Some interesting work was undertaken at Sembehun Agricultural Station on rice disease, and specimens showed that they were all attacked by a *Fusarium*. On one basal leaf sheath perithecia were found of an *Ophiobolus* resembling *O. cariceti*. Fifteen identifications of fungi not previously recorded from this country were received from the Imperial Institute and over 100 specimens of fungi and some 120 specimens of flowering plants were collected during the year and despatched to the Imperial Mycological Institute and Royal Botanic Gardens, Kew, respectively, duplicates being placed in the Herbarium. During the year the herbarium of the Forestry Department was amalgamated with that of this department.

33. The Entomologist was able to assist with the identification of certain species of tsetse fly at Tekaw during the dry season, where *Glossina palpalis* R.D. and *G. fusca* were observed. He was also able to make investigations on the stomoxys fly which was identified as *S. calcitrans* L. Control measures have been recommended in both cases.

34. No reports of any recrudescence of locust swarms have been received.

35. Time was also found to deal with some minor pests at Njala, including the grasshopper *Zonocerus variegatus* L. and fruit-piercing moths, the predominant species being *Achaea catocaloides* L.

36. *Staff.*—Two Agricultural Officers were appointed at the end of the year to fill two of the three existing vacancies. It is hoped to fill the third vacancy during 1941.

AGRICULTURAL EDUCATION.

37. The Njala Training College, the functions of which have been fully described in previous reports, has completed another successful year. The ten Agricultural Apprentices of the senior class completed their course at the end of 1940, and eight out of this total received appointments on the staff of this department early in 1941. A further twelve new apprentices have been recruited for the 1941 entry, and by arrangement with the Government all students at the Mabang Academy have been transferred to Njala.

38. Special attention has been paid to the practical side of the course and the College farm has been extended during the year. It is hoped that further use will be made of Njala Government Farm for practical training.

39. A special feature of the year has been the excellent health of the students, and the average attendance has exceeded 98 per cent.

SECTION III—LEGISLATION.

40. Legislation enacted during 1940, and which deals with agricultural matters was confined, to those parts of the Defence Regulations which related to the fixing of prices of local and imported foodstuffs by the Controller of Merchandise, and to the powers invested in him for the control of movement of produce, etc.

I have the honour to be,

SIR,

Your obedient servant,

F. J. MARTIN,
Director of Agriculture.